



Additional Chart Coverage may be found in CATP2, Catalog of Nautical Charts.

### SECTOR 3 — CHART INFORMATION

## SECTOR 3

### EAST COAST OF BRAZIL—PONTA DE SANTO ANTONIO TO CABO FRIO

**Plan.**—This sector describes the E coast of Brazil, from Ponta de Santo Antonio to Cabo Frio and the outlying islands of Ilha da Trindade and Ilhas Martin Vaz. Included in this sector are the ports of Salvador, Vitoria, Tubarao, Ilheus, Camamu, Seguro, and numerous river ports of lesser importance. The progression and arrangement is from N to S.

#### General Remarks

**3.1 Winds—Weather.**—Inside Baía de Todos os Santos, the winds are usually from the NE in the summer and from the SE in the winter. August is the month of S storms which are called Cambueiros. From April to August, winds blow from the E and SE; in September the NE winds begin, accompanied by thunderstorms. March and April are calm. Bad weather does not last very long and is usually followed by a calm or winds from the E.

The winds from the S usually subside during full moon and new moon; they sometimes blow for two or three days in succession causing the waters of the interior of the bay to surge so much that this condition lasts after the wind has ceased to blow and this usually occurs during ebb tide. Winds from the S may cause a considerable sea in the bay.

From September to March, the NE winds are sometimes strong between periods of light winds or calms. From March to September NE winds are rare; during this period, SE and SW winds prevail. They are generally stronger than the NE winds. The arrival of the SW winds, which are not the strongest, is indicated by a calm that follows rather strong NE winds; the shorter the period of calm the greater the intensity of the SW winds. From March to September, SE and SW storms are preceded by a sharp rise in temperature, a great calm, and a calm sea.

Winds from the NE or N cause hazy condition with resultant reduced visibility.

#### Ponta de Santo Antonio to Ponta Corumbau

**3.2 Ponta de Santo Antonio** (13°01'S., 38°32'W.) is the SW point of the mainland coast which lies on the E side of the entrance of the Port of Salvador and Baía de Todos os Santos.

In the vicinity of the point, the land, covered with trees, is higher than that to the W and is visible for about 30 miles. A light is shown from the old fort of Santo Antonio da Barra, which stands on the extremity of Ponta de Santo Antonio.

Numerous tall buildings stand near the lighthouse making it difficult to discern. Two conspicuous television masts are situated about 2 miles ENE of Ponta de Santo Antonio.

Banco de San Antonio, with depths of less than 11m, lies about 0.3 mile S of Ponta de Santo Antonio and extends 4.5 miles S. It is composed of red sand and coral and is steep-to.

The sea sometimes breaks on the bank during S winds. The shoal has a minimum depth of 2.8m.

Due to its narrowness and the strong currents through, the channel N of the bank should only be used with local knowledge.

A stranded wreck lies on the W side of the shoal about 2.7 miles S of the light.

Other dangerous wrecks lie about 2.7 miles SE and 0.2 mile WNW of the same light.

Ponta de Santa Maria, on which there is an old fort, lies 0.4 mile N of Ponta de Santo Antonio.

Pedra de Gamboa, a rock with a depth of less than 3m, lies on the W edge of Banco da Gamboa, 1.75 miles NNE of Ponta de Santo Antonio. Pedra Tira Pomba, a rocky ledge with a least depth of 0.7m, lies 0.2 mile SW of the S breakwater in the harbor of Salvador.

#### Port of Salvador (12°58', 38°31'W.)

[World Port Index No. 12770](#)

**3.3** The port of Salvador, on the E side of and just within the entrance of the Baía de Todos os Santos, is located about 3 miles NNE of Ponta de Santo Antonio.

The port is limited by the line E to W which passes through the Santo Antonio Lighthouse bridging the frontier coast of the island of Itaparica, and from there turning to enter the bay through the same line E to W which connects the continent and that towards the coast N as far as parallel 12°50'W, and then from there going E towards the continent.

The port has two access channels, an inner channel with a minimum depth of 8m and an outer channel with depths that vary from 13 to 15m. Salvador is the fourth largest city in Brazil.

#### Winds—Weather

Winds are usually from the NE in the summer and from the SE in the winter. August is the month of storms from the S, which are called Cambueiros.

Bad weather generally lasts only a few hours and is followed by a calm or winds from the E. Winds from the S may cause a considerable sea in Baía de Todos os Santos.

#### Tides—Currents

The mean HW interval is 2 hours 54 minutes. The spring range was 2.2m and the neap range was 0.9m.

The flood current runs about 5 hours to the NNE and the ebb current runs 7 hours to the SSW.

The velocity of the tidal currents is about 1.5 knots, increasing to between 2 and 3 knots during spring tides.

Tidal currents in the anchorage N of Banco da Panela run NNE and SSW; their rate, especially that of the SSW current, is considerable.

To the W of Banco da Panela, the ebb current is reported to attain rates of 3 to 4 knots.

### Depths—Limitations

Banco da Panela, a rocky bank with a least depth of 4.4m, lies W of the S entrance to the harbor, about 2.5 miles N of Ponta de Santo Antonio. Its position can best be seen on the chart. This bank is about 1 mile long and between 0.25 and 0.5 mile wide. The shallower part of the bank has extended W.

Between the shoal and the S breakwater, 0.6 mile E, there is a channel with a least depth of 7.9m.

A detached shoal, with a depth of 9.1m, lies 0.3 mile NNW of the head of the S breakwater.

Entrance to the inner harbor can be made to the N or S of the detached N breakwater. The N entrance is used mainly by large vessels. There are least charted depths of 9.1 and 8.1m in the N and S entrances, respectively.

There are no restrictions; however, if draft is over 8.5m berthing and unberthing take place 1 hour before HW until 1 hour after HW. The anchor is used for berthing. Cargo and container vessels berth at 10m quay at anytime.

The main berthing area for ships is the quays bordering the E side of the harbor. The quays have a total length of 2,073m.

Vessels with a draft of up to 7.5m can be accommodated along 1,249m of the quay.

The tanker quays, at the N end of the harbor, have three berths, each 170 to 180m long, and can accommodate vessels with a draft up to 10.5m.

An L-shaped breakwater in under construction (1996) SW of the inner part of the main breakwater.

### Aspect

The harbor is protected from the SW by a breakwater which extends 0.5 mile NNW from the coast, 2.5 miles NNE of Ponta de Santo Antonio. A cylindrical fort is situated within this breakwater, 0.2 mile SE of its head.

A detached breakwater lies with its SW end 0.25 mile ENE of the head of the S breakwater and extends 0.7 mile NE.

One of the most prominent port landmarks in the vicinity of the anchorage is a reddish slate round chimney, 46m high, which stands about 0.7 mile SE of **Ponta de Monte Serrat** (12°56'S., 38°31'W.).

To the N and in the vicinity of the chimney are many cottages with red roofs. A fort stands on Ponta de Monte Serrat.

The conspicuous white church of Nosso Senhor do Bonfim, with a large tower at either corner of a facade, is situated about 0.7 mile ENE of Ponta de Monte Serrat.

Gas being burned at a refinery at **Mataripe** (12°42'S., 38°35'W.), 13.5 miles NNE of Ponta de Monte Serrat, shows up well at night.

A white square elevator, with an iron roof, stands abreast of the S end of the inner harbor.

The customhouse, close N of the elevator, is a conspicuous white building with a red roof and circular open front supported on pillars.

### Pilotage

Pilotage is compulsory for all foreign vessels and is available day and night. Pilots board the vessel from a launch SW of Banco da Panela. Advance notice should be given 48 and 24 hours prior to arrival.

### Anchorage

Vessels anchor about 0.2 mile WNW of the head of the N detached breakwater, in depths of 13.5 to 22m, mud, good holding ground. Care should be taken not to obstruct the passage of vessels using the N entrance to the harbor.

A quarantine anchorage is situated 2.5 miles W of Ponta de Monte Serrat. An explosives anchorage is located 2.75 miles SW of the same point. An anchorage for LASH ships is located in an area about 0.7 mile SSE of Ponta de Monte Serrat, in about 14.6m.

Vessels proceeding to ports in the N part of the bay can anchor about 0.6 mile SW of Ponta de Monte Serrat, in depths of 23 to 25m, mud.

Anchoring is prohibited in a area about 0.4 mile NNE of the N head of the detached breakwater.

### Baia de Todas os Santos

**3.4** The bay is entered between Ponta de Santo Antonio and the E coast of Ilha de Itaparica, 5 miles to the WNW. The main channel leading to the entrance of the bay lies W of Banco de Santo Antonio. The channel at the entrance is about 2.5 miles wide between Ponta de Santo Antonio and Pedra do Baixo Grande. The N part of the bay is known as Reconcavo and contains a number of islands, rivers, and good anchorages.

Caution should be exercised at night and during poor visibility when navigating the bay N of Salvador as there are oil drilling structures in the area.

The structures show flashing lights, but disused structures are unmarked and at times submerged. They are temporary structures that are not charted. Submarine cables and pipelines are seen on the area chart.

Depths in the bay are irregular and reach 60m about 3 miles E of Ponta de Itaparica. Charted depths in the middle of the bay approaches to the entrance of the marked channels which lead to Baia de Aratu and Porto de Madras de Deus, range from 14.6 to 35m with depths of 50m and 53m lying about 2.7 miles W of Ponta de Monte Serrat.

**Ponta da Sapoca** (12°50'S., 38°29'W.) lies 6.5 miles NNE of Ponta de Monte Serrat. A pier supporting a conveyor system extends 0.5 mile W from the point. At the head of the pier is Terminal da Usiba, comprising a wharf 70m long with flanking dolphins and five mooring buoys. One ship up to 170m in length, 25m in width, and with a draft up to 10m can berth at the terminal. A smaller pier, with a light at its head, extends SW from the shore 0.3 mile S of Ponta de Sapoca.

Pilotage is compulsory and pilots will board at the anchorage SW of Ponta de Monte Serrat.

A detached island quay, marked by a light at each end, stands close N of this pier.

Baia do Aratu is entered 8.5 miles NNE of Ponta de Monte Serrat through a deep, but narrow and tortuous channel which

forms the lower part of Rio Cotegipe and is about 2 miles long. The greater part of the bay has depths of over 5m and there are depths of over about 10m in the vicinity of the entrance. There is a naval base in Baía do Aratu.

**Ponta da Mangueira** (12°47'S., 38°29'W.) is on the N side of Rio Cotegipe, about 1.5 miles ENE of Ponta da Areia. A T-shaped jetty, with flanking dolphins, projects S from the point.

The jetty can accommodate ships up to 15,000 grt, with a maximum length of 170m, beam of 25m, and draft of 10.3m.

**3.5 Porto de Aratu** (12°47'S., 38°30'W.) ([World Port Index No. 12772](#)) is situated N of the entrance to Baía do Aratu, and consists of three jetties projecting SW from Ponta do Marinho and Ponta Joao Pereira, N of Ponta da Areia. The maximum size vessel entering the port is 65,000 grt.

The Bulk Solids Terminal has a berth 153m long on its N side, with a depth of 10m and a berth 203m long, with a depth of 11m on its S side.

The Bulk Liquids Terminal has two berths. The N berth is 100m long with a depth of 10.9m, and the S berth is 70m long with a depth of 11m.

Gas Products Terminal consists of a pier for handling of liquefied gasses and has one mooring berth. The berth is 70m long with a depth of 10.9m alongside.

Pilotage is compulsory for Porto de Aratu and Baía do Aratu. Pilots are requested at least 2 hours in advance, specifying the time of the vessels entry. Pilots will board at the anchorage SW of Ponta de Monte Serrat.

The channel leading from S to the entrance to Baía do Aratu, Porto de Aratu, and the fairway of Rio Cotegipe are marked by lighted buoys. The channel is about 0.3 mile long, 0.1 mile wide, and has a minimum depth of 18m. The maneuvering basin has a depth of 12m. A light is shown from Ponta da Areia, the S entrance point of Baía do Aratu.

**3.6 Ilha do Frade** (12°47'S., 38°38'W.) lies 7 miles W of Ponta da Areia. A light is shown from the S extremity of the island. Ilha Madre de Deus lies 0.5 mile N of Ilha do Frade.

**Porto de Madre de Deus** (12°45'S., 38°37'W.) ([World Port Index No. 12775](#)), located at the SW extremity of Ilha Madre de Deus and about 0.3 mile N of the N end of Ilha do Frade, is approached through a channel marked by lighted beacons. The channel, about 0.1 mile wide at its narrowest part, has a minimum depth of 10.8m near buoy No. 7.

The port consists of two L-shaped petroleum jetties extending SW from **Ponta Mirim** (12°45'S., 38°37'W.). The outer jetty can handle tankers up to 85,000 dwt. There are five berths at the two jetties with depths alongside, as follows:

Berth	Depth
P1	12.0m
P2	12.5m
P3	11.0m
S1	7.3m
S2	7.5m

Vessels are berthed day or night, stemming the tidal current which is reported to attain a rate of 4 knots. Berthing at P1 is done 6 hours either side of HW.

Berthing at P3 is done on the flood current and vessels berth port side-to at P1, P2, P4 and S1 and starboard side-to at P3 and S2.

A jetty projects W from the coast about 0.2 mile N of Ponta Mirim and has a depth of 3.3m alongside the head.

Pilotage is compulsory. Pilots board SW of Ponta Monte Serrat.

**Regulations.**—The following regulations were issued by the Brazilian Port Authority for the approach to the terminal:

Vessels must not meet and pass nor overtake while in the approach channel areas between beacons Nos. 1, 2, 5, and 6, and between beacons Nos. 11, 13, 14, and 16.

Inward bound vessels shall yield to outward bound vessels.

Anchoring is prohibited, except in an emergency, within the vicinity of the oil terminal.

The existence of unlighted buoyage markers within the approaches indicates the position of underwater pipelines.

**3.7 Rio Paraguacu** (12°50'S., 38°48'W.), which enters the bay 9 miles W of the S end of Ilha do Frade, is navigable from its mouth for about 22 miles to the town of Cachoeira, located in the W part of Reconcavo. São Roque do Paraguacu, from which ore is shipped, and Maragogipe, with a pier where ships with drafts up to 4.5m can berth, are ports located on the Rio Paraguacu below Cachoeira.

Canal de Itaparica, which separates Ilha de Itaparica from the mainland to the W, is entered between **Ponta Itaparica** (12°53'S., 38°41'W.) and Ilha do Medo, 1.75 miles NW. This channel should not be attempted without local knowledge.

A prohibited area exists close N and W of Ponta Itaparica and a restricted area, in which anchoring and fishing are not permitted and vessels should not navigate without authority, extends about 0.5 mile offshore for a distance of 2 miles S from the point.

Rio Jaguaribe flow into the W side of Canal de Itaparica close to its S end and has depths of 3.5m up to 22 miles above its mouth.

**3.8** Between Ponta Garcia, the S entrance point of Canal de Itaparica, and the W entrance point of Rio Una, 6 miles SW, the coast forms a low sandy bay which is fringed by shoals to a distance of 2 to 3 miles.

**Morre de São Paulo** (13°22'S., 38°55'W.), the N extremity of Ilha de Tinhare, marks the SE side of the entrance of the Rio Una. It is a conspicuous mount, which falls abruptly onto the sea, on the N and W sides. When seen from a distance it shows two peaks; the S peak has a hillside with a smooth descending slope and the N peak hillsides have a more pronounced descending slope. Next to the N side, there is a masonry tower from which a light is shown. It is the most visible bearing for the mariner coming from the S.

**Anchorage.**—The mouth of the Rio Una, W of Morre de São Paulo, affords easy access to an anchorage known as Portalo which provides shelter from E through SW winds.

Anchorage may be obtained in 6 to 8m, in front of a village about 0.5 mile SW of the light.

**Rio Una** (13°23'S., 38°56'W.) empties W of Morre de São Paulo.

Banco Joao Goncalves, in the W part of the river mouth, restricts the width of the entrance over the bar and anchorage to

about 0.7 mile. The sea breaks over this extensive sandbank and the S part is partially dry.

The E side of the channel just within Morre de Sao Paulo is steep-to, but 0.5 mile to the S a bank begins and borders the S shore to a distance of about 0.1 to 0.2 mile. In the SW part of the river mouth the channel trends to the N and is about 0.5 mile wide between the bank and the low W point of the mainland. The minimum depth in the channel is about 10m.

**Ilha de Tinhare** (13°29'S., 38°58'W.) and Ilha de Boipeba form the coast for about 18 miles S of Monte de Sao Paulo. Channels and rivers separate the islands from each other and from the mainland. Small craft navigate these waters.

Ponta de Castelhanos, the SE extremity of Ilha de Boipeba, is fringed with reefs and rocks, which extend out 1 mile from the point. A wreck, partially submerged, lies stranded about 1 mile NE of Ponta Castelhanos.

**Ilha Quiepe** (13°50'S., 38°56'W.), a small reef fringed island about 0.25 mile in extent, lies on the N side of the entrance of Porto de Camamu. The island is flat, covered by coconut trees and can be seen as far as 13 miles away making it an excellent bearing for navigation. Two houses are located on the N side of the island.

**3.9 Porto de Camamu** (13°52'S., 38°56'W.) ([World Port Index No. 12780](#)) is the common mouth of Rio Camamu and Rio Marau. The port lies between Ilha Quiepe and Ponta Muta, about 2.5 miles S of Ilha Quiepe. The port is privately owned and is used exclusively to export barium ore.

**Winds—Weather.**—Prevailing winds are NE from September through February, S from March to August, and E during August.

**Tides—Currents.**—Tidal heights above chart datum are: MHWS 2.1m, MHWN 1.6m. The spring range is 2m and the neap range in 1m.

The ebb current, increased by the waters from the rivers which flow into the bay, is much stronger than the flood. The average velocity of the ebb is 1.5 to 2 knots and it sets toward Ilha Quiepe and the reefs in the vicinity of the island.

Current velocities of up to 5 knots at ebb and 3 knots at flood have been recorded.

**Depths—Limitations.**—There is a least charted depth of 9.1m in the recommended approach about 2.2 miles ESE of Ilha Quiepe light.

A least depth of 7.6m is charted in the approach to the buoyed channel entrance. Least depth in the buoyed channel is charted at 7.2m. It was reported the maximum safe draft for entering the port was 8.5m.

The ore berth is located on the E side of Ilha Grande de Camamu. It consists of a T-headed pier with a face about 80m in length. There is a least depth of 5m alongside the face.

Mooring buoys are situated N and S of the pier. Vessels moor starboard side-to to the pier head.

**Pilotage.**—Pilotage is compulsory. Pilots for the port of Camamu are available at Salvador.

**Anchorage.**—Vessels anchor in 15m, sandy bottom, about 0.7 mile W of Ponta Muta.

This anchorage lies between Pedras Paragonas de Baixo and Pedras Guaraiubas. Vessels may also anchor near the middle of the in 12.8 to 14.6m, about 0.2 mile NW of Ponta do Gaviao, located nearly 3 miles SW of Ponta Muta.

**3.10** From Ponta Muta to the Port of Ilheus, a distance of about 55 miles, the coastline trends almost due S and is free of dangers. The N end of this stretch of coast is low and sandy, with some patches of palm trees. The S end is high in places with bluff points and sheer cliffs.

**Cabo Tromba Grande** (14°16'S., 38°59'W.) is a conspicuous cliff of black rocks and is located about 25 miles S of Ponta Muta. The prominent summits of Serra Grande lie to the SSW of the cape.

Ponta Trombinha, about 1 mile N of Cabo Tromba Grande, is equally bold but less elevated than the cape. The point marks the N side of the entrance of the Rio das Contas.

Sandbanks lie on the N side of the entrance to the river. Contas Islet lies close N of Ponta Trombinha and shows a light.

**Rio das Contas** (14°16'S., 39°00'W.), which is about 250 miles long, has depths of 2m and an average width of about 137m as far as Cachoeira do Funil, about 12 miles from its mouth. The currents in the river are rapid, especially after heavy rains.

Within the entrance, the S bank is high and wooded. Cidade de Contas stands on the S bank 1 mile SW of Ponta Trombinha. In the river mouth the ebb current attains a rate of from 3 to 4 knots.

When the sea is calm there is little difficulty in entering Rio das Contas, but fresh onshore winds cause breakers across the mouth of the river during the ebb tide.

Anchorage is afforded near the entrance of the river in 14 to 17m, with Cabo Trombe Grande bearing 185°, distance 2 miles.

**3.11 Ponta da Serra Grande** (14°28'S., 39°01'W.) is the E extremity of the Serra Grande, a chain of mountain ranges which rise to the W of the point. From offshore the mountains appear as cliffs running in a N and S direction for a distance of 10 miles. Depths of 20.1m lie about 1 mile off the point.

From Ponta de Serra Grande the low sandy shore continues S for about 18 miles to the mouth of the Rio Almada. High land backs the greater part of this section of the coast. A wide valley lies between the Serra Grande and the hills to the S which rise to the N of the Rio Cachoeira, the river which empties into the sea at Ilheus.

The village of Itaipe lies on the N side of the mouth of the Rio Almada. Sandbanks, about 0.2 mile offshore, encumber the entrance of the river.

## **Port of Ilheus (Malhado) (14°47'S., 39°01'W.)**

[World Port Index No. 12810](#)

**3.12** The port of Ilheus consists of Porto do Malhado, a breakwater with berthing on its W side and projecting NE and N from Ponta do Malhado, and Porto do Rio Cachoeira, the original port of Ilheus, on the N bank of the river, 0.5 mile within its mouth and used only by fishing boats.

**Winds—Weather.**—The prevailing winds are reported to be from the SE.

**Tides—Currents.**—Tidal heights above chart datum are MHWS 1.9m, MHWN 1.4m. The spring range is 1.7m and the mean range is 1.4m.



Velocities of the tidal currents are about 1 knot during the flood and 2 knots during the ebb.

**Depths—Limitations.**—The artificial basin is formed by a breakwater 1,922m long. The first leg, aligned NE to SW, is 650m long followed by a curved section that is 162m long leading to the last section, aligned N to S, 1,110m long.

It was reported that the breakwater was being extended, with underwater work in progress for about 365m N from its head.

The maneuvering basin is 560m wide with a depth of about 10m. The approach channel is 1,000m long with a depth of about 10m.

The docking facilities consist of a quay 432m long, dredged to a depth of 10m, situated along the W side of the breakwater.

A 70m long wooden T-shaped pier, with a depth of 7m alongside and used to transfer liquefied petroleum gas, lies at the root of the breakwater.

Porto do Rio Cachoeira consists of six piers which extend from the N bank of the river W of the N end of Morro de Sao Sebastiao. All have depths of at least 4.1m alongside.

**Aspect.**—Morro de Sao Sebastiao, a high hill, forms the W entrance point to Rio Cachoeira. A monument stands on its S extremity known as Ponta Maria Augusta. A church, with a conspicuous dome and towers, stands 0.4 mile N of Ponta Maria Augusta. A prominent church, painted gray, stands on a hill, 0.35 mile farther N.

Morro Pernambuco, a peninsula 30m high and covered with vegetation, forms the E entrance point of Rio Cachoeira. A ruined fort and cross stand near the NW extremity of the peninsula. A light is shown from the summit of Morro Pernambuco.

Lights are shown from the breakwater head at Malhado and from Ilheu Grande.

**Pilotage.**—Pilotage is compulsory; advance notice of at least 4 hours must be given. Pilots board vessels about 0.2 mile NNE of the breakwater head for the Malhado Pier and about 0.6 mile NNE of Morra Pernambuco for the piers in Rio Cachoeira.

**Anchorage.**—Vessels awaiting a pilot for Porto de Malhado should anchor 0.2 to 0.3 mile NNE of the breakwater head in depths of 10 to 12m, sand. Vessels awaiting a pilot for Porto do Rio Cachoeira should anchor 0.6 mile NNE of Morro Pernambuco in depths of 5.2 to 8m, sand. Anchorage may be obtained anywhere between these two anchorages, but preferably W of Ilheu Grande and its adjacent islets.

Vessels working cargo into lighters may anchor W of the breakwater in depths of more than 8m where the sea is usually calm. Vessels waiting to berth at the piers at Porto do Rio Cachoeiro may anchor temporarily in the river off the piers, sheltered from all winds, in depths of 6 to 8m, mud.

**Anchorage.**—Anchorage is forbidden along the 100m stretch of the wharf and in the access channel.

A quarantine anchorage has been established 1 mile NNE of the breakwater head.

**Caution.**—Less water than charted was reported within the 10m depth contour in the approaches to and in the maneuvering basin at Ilheus.

The area at the head of the harbor, SE of the small breakwater, is being reclaimed.

A chain of islets and reefs, nearly 2 miles long, parallels the coast at a distance of 1 to 2 miles. Ilheu Grande is the largest

and N most of the group. The island is always exposed and equipped with a light. It lies about 1.2 miles NE of Ponto do Malhado and is visible about 15 miles.

Ilheuzinho, a group of uncovered rocks, lies about 137m SE of Ilheu Grande. Itaipins Reef, part of which uncovers, lies 0.75 mile SSE of Ilheu Grande. Ilhote de Itapitanga lies nearly 1.25 miles S of Ilheu Grande. Parcel dos Sororocas extends about 0.6 mile SSE from Ilhote de Itapitanga. The reef never uncovers, but breaks with a small sea.

Laje do Rapa, a group of three rocks which uncover at LW and on which the sea always breaks, lies nearly 0.5 mile N of Morro Pernambuco. Coroa do Rapa, a drying sandbank marked by breakers, extends to the E from the beach to the vicinity of Laje do Rapa.

Vessels are cautioned not to use the channel between Recifes Itaipios and the N extremity of the foul ground extending N from Ilhote de Itapitanga.

**3.13** The coast from Ilheus to Belmonte, 65 miles S, is high along the N part to Barra do Una, then S it continues low to Barra de Belmonte.

The coast is backed by mountain ranges, which rise from 15 to 18 miles inland and are normally visible up to 30 miles offshore. The highest range is Serra Panemosa, 620m high, and fairly isolated from the outer mountains. It has an undulating summit and is easily identified as the best landmark near this part of the coast.

The coast is clear of dangers except for some coral reefs which extend 1 mile offshore in places along its N part.

**Olivenca** (14°58'S., 39°01'W.), a small village about 10 miles S of Ilheus, is situated on the summit of a hill near the shore. The village and a church are conspicuous from offshore.

**Ponta Itapua** (14°59'N., 38°59'W.), a low salient point covered with trees, is located about 3 miles SSE of Olivenca.

The mouth of the Rio Aquipe lies about 6 miles S of the point. Conspicuous white cliffs stand on the S bank of the river and are visible from offshore.

**Rio Una** (15°15'S., 39°00'W.) lies about 11 miles S of the mouth of the Rio Aquipe. The village of Pedras stands about 2 miles SSW of the mouth of the river on its W bank. About 3 miles S of the Rio Una, the Rio Doce empties into the sea.

A submerged obstruction, with a depth of 27m, lies about 8.5 miles SE of the mouth of the Rio Una.

**3.14 Barra das Canavieiras** (15°43'S., 38°57'W.) lies at the entrance of the common mouth of several rivers, the most important of which is the Rio Pardo.

The town of Canavieiras is situated on the N bank of the Rio Pardo, about 3 miles within the entrance.

The land in the vicinity of the bar is very low, but a white church tower in the town provides a landmark from offshore.

The town has four piers with depths of 3.1m at the pier heads.

Pilotage is available. The bar should only be approached when using the services of a pilot.

Anchorage is afforded in 10 to 11.9m, mud, about 4 miles ESE of the church tower.

**3.15** The coast SSE of Barra das Canavieiras to Belmonte, a distance of about 9 miles, is low, wooded, and broken by the

entrances of a lagoon. Small villages mark this section of the coast. With the exception of the Morros de Comandatuba, visible to the NW, the country is void of high land, being flat and marshy.

**Barra de Belmonte** (15°50'S., 38°52'W.), 8 miles SSE of Barra de Canavieiras, is the mouth of Rio Belmonte (Jequitinhonha), which runs a course of about 300 miles. The only means of identifying the river entrance is Belmonte light on the S side of the river.

The bar should only be approached with local knowledge or with local available pilots. On the spring tides the depth of the access channel is about 2m. The sandbanks close to the bar vary in position at times.

After prolonged rains, which usually occur from November to March, the outflow of the river is considerably increased, causing strong currents over the bar. During these periods, discolored water can be seen up to 10 miles offshore.

**Belmonte** (15°51'S., 38°53'W.) is located on the S bank of Rio Belmonte a little more than 1 mile from the bar. A light stands on the S bank of the bar. It is not visible from offshore because it is surrounded by dense and close coconut groves.

There is a wharf, 450m long with depths of from 3.6 to 5m alongside.

Anchorage may be obtained outside the reef and shoals in 10m, mud, with Belmonte light bearing 245°, distance 4 miles.

After crossing the bar, anchorage may be had in the deeper water inside the chain of shoals, but local knowledge is essential.

## Belmonte to Porto Seguro

**3.16** From the mouth of the Rio Belmonte, the coast continues in a S direction to Porto Seguro, a distance of 36 miles.

This part of the coast is rather low with some small hills inland a few miles from the coastline.

Morro Dois Irmaos, a mountain with twin peaks, rises about 20 miles inland and can be seen in clear weather.

**Ponta Arajipe** (16°10'S., 38°57'W.), marked by a light, lies 18 miles S of Barra de Belmonte. Recife de Arajipe is a drying reef which extends up to 3.5 miles E of the point.

Ponta San Antonio, the S entrance point of Rio San Antonio, lies 3 miles SSW of Ponta Arajipe.

A dangerous underwater rock lies about 15 miles ESE of Ponta San Antonio.

Baia de Cabralia is entered between Ponta de Santo Antonio and Ponta de Coroa Vermelha, 7.5 miles SSW.

The shore of the bay is of moderate height and is backed by wooded hills 30 to 35m high. The valley of Rio Joao de Tiba, the mouth of which lies 4.5 miles SW of Ponta de Santo Antonio, is very prominent from seaward. The town of Santa Cruz, with its prominent church, stands on the S side of the river.

The sandy beach forming the shore of Baia de Cabralia is interrupted by two lines of reefs, separated by a small gap, and extending 2 miles NNE from the mouth of Rio Joao de Tiba.

These reefs dry and form a natural breakwater. A number of reefs and rocks lie to the SSE of Baia de Cabralia and can best be located by the area chart.

Anchorage is afforded in the N part of Baia Cabralia, 0.5 mile ESE of the N end of the two lines of reefs extending from the mouth of Rio Joao de Tiba.

The anchorage has depths of 7m, mud, and good holding ground.

Vessels may also anchor in the S part of the bay, 0.7 mile N of Ponta da Coroa Vermelha, in depths of about 7m, fine sand and mud. Small craft can anchor closer inshore towards the point.

A vessel should anchor in the N part of the bay during winds from between N and E, and in the S part during SE winds. The sea is never heavy in either part of the bay, even during SE winds.

**3.17 Rio Joao de Tiba** (16°17'S., 39°02'W.) can be reached by small craft with local knowledge via a channel about 91m wide, on the W side of the two lines of reefs extending NNE from its mouth. Pedra Baixinha, a rock with a depth of 1m, lies off the entrance to this channel, 0.2 mile NE of the end of the reefs.

**Ponta Grande** (16°22'S., 39°01'W.) is located 2.5 miles S of Ponta da Coroa Vermelha. The point is low and inconspicuous and marks the N end of Baia de Porto Seguro.

Between the two points, extensive reefs and rocks border the low shore. A shoal, with a depth of 8.5m, lies 2.5 miles E of Ponta Grande.

**Baia de Porto Seguro** (16°26'S., 39°03'W.) lies between Ponta Grande and the mouth of the Rio Buranhem, about 5.7 miles to the SW. A ridge of hills, with red cliffs and coconut palms, lies parallel with the coast about 1 mile inland and is broken by the marshy valley of the Rio Buranhem.

The valley and the church of Nossa Senhora da Pena, which stands on the N side of the river, are reported as conspicuous landmarks. Porto Seguro Light stands close NE of the church.

Recifes de Fora, nearly 3 miles long and about 1.5 miles wide, lies with its outer edge about 6 miles ENE of Porto Seguro Light. For about 2 miles of its length this coral reef uncovers and the sea always breaks over it. Several shoal patches, with depths of 6.2 to 8.1m, lie within 2.5 miles S and SSW of Recifes de Fora.

Rio Buranhem can be entered through a channel 0.1 mile wide and a depth of 3.6m at HWS. The channel lies between the N extremity of the chain of reefs and the coast.

Pilotage is available and vessels are boarded on the outside of the bar. Their services should be requested by wire prior to arrival.

Anchorage is afforded in depths from 8 to 9m, sand and mud, good holding ground, in a position about 1 mile ESE of the church of Nossa Senhora da Pena. The anchorage is unsheltered from NE to SE winds.

Vessels also anchor farther offshore in depths of about 10 to 11.9m, about 2 miles ESE of Porto Seguro Light.

**Porto Seguro** (16°27'S., 39°04'W.) ([World Port Index No. 12820](#)) is situated on the N bank of the Rio Buranhem, just within the rivers entrance. That part of town which stands on low ground is hidden by coconut palms, the higher part of town

is visible from offshore. The port is used mostly by coastal steamers.

### Porto Seguro to Porto de Caravelas

**3.18** From the mouth of Rio Buranhem to Ponta Itaquena, 11 miles to the S, the coast has no salient features. A short distance S of the river mouth, hills rise from the coast. One mile S of the river mouth, the church of Nossa Senhora da Ajuda stands on one of the hills and is conspicuous from seaward.

**Barreiras Vermelhas de Porto Seguro** (16°30'S., 39°04'W.), a line of red cliffs, 3.5 miles S of Porto Seguro, rise sheer from the sea to heights of 40 to 50m on the S side of the mouth of Rio Taípe. They extend 3 miles S and are interrupted near the middle by Rio Pitinga and can be seen from 25 to 30 miles offshore.

Red cliffs reappear 1.5 miles S of Barreiras de Porto Seguro, but they are lower and less prominent and decrease in height near Ponta Itaquena. The village of Trancoso stands between the two sets of cliffs.

**Ponta Juacema** (16°45'S., 39°08'W.), 10 miles SSW of Trancoso, rises in white cliffs, which appear as steps on the S slope of a hill.

Ponta Juricuara, about 2 miles farther S, is red in color. Recife Juacema, with a depth of 1m, sand and coral, lies 0.5 mile S of Ponta Juacema.

Recifes de Pitiacu, with depths of less than 0.6m, lie 1 to 2 miles ESE of Ponta Juricuara. There are depths of from 7 to 8m between these reefs and the coast.

The channel between Recifes Pitiacu and Recife Juacema is about 0.7 mile wide and has depths of 6.4m.

Anchorage may be obtained close N of Ponta Itaquena in a depth of 10m, good holding ground, but should not be attempted without local knowledge as there are reefs close off the point.

The area W of Recife Juacema and Recifes Pitiacu is clear of dangers and affords good anchorage to small vessels. It is well sheltered from all winds and access is easy.

Temporary anchorage may be taken in good weather, about 0.7 mile SE of Ponta Juacema, in depths of from 9 to 10m, mud, with good holding ground.

During fresh winds a vessel should anchor W of Recifes Pitiacu, passing either N or S of these reefs.

**3.19 Ponta de Corumbau** (16°52'S., 39°07'W.) is low and sandy, and covers to a great extent at HW. A light is shown from the point.

To the N of the point the coast is low and covered with vegetation as far as Barra do Gramina, 4.5 miles NW. Reefs and shoals extend 2 miles from N of the point.

**Monte Pascoal** (16°53'S., 39°24'W.), which is prominent, rises to an elevation of 535m nearly 18 miles W of Ponta Corumbau, and forms part of a range trending parallel with the coast. When seen from NE or E, it appears isolated with a rounded and somewhat conical summit, but from SE it appears to be joined to other hills.

To the SW of Monte Pascoal there is Joao do Leao peak, with a greater altitude and more outstanding because of its cylindrical formation.

**Recifes Itacolomis** (16°54'S., 39°04'W.) are a group of reefs lying on an extensive sandy shoal which extends nearly 6 miles E from Ponta Corumbau. The reefs dry near the center of the shoal. The shoal is steep-to on the seaward side, rising abruptly from depths of over 20m, and soundings give little indication of its proximity.

Passing vessels are advised to keep in depths of over 30m which will give the shoal a berth of at least 6 miles.

Canal dos Itacolomis, between Recifes Itacolomis and Ponta Corumbau, is narrow and tortuous with depths of from 5 to 7m. The most favorable time for passing through it is at LW when the reefs uncover, but it should not be attempted without local knowledge.

Anchorage may be obtained by vessels with local knowledge between the S part of Recifes Itacolomis and the coast SW of Ponta Corumbau in a depth of 9m, sand and mud.

This anchorage is sheltered from all winds except from the S, and the holding ground is good.

**3.20 Ponta Mato Grosso** (16°57'S., 39°10'W.), nearly 5 miles SW of Ponta Corumbau, may be identified by its conspicuous high red cliffs. Barreira do Cai, 3.5 miles S of Ponta Mato Grosso, is a high extensive whitish cliff and makes a good landmark for Canal dos Itacolomis.

Barreiras de Taua, 2.5 miles S of Barreira do Cai, are smaller than the latter and reddish in color. The village of Cumuraxatiba is a small settlement. A white church and the chimney of a factory can be seen from the sea.

A chain of detached reefs extends S from Ponta Corumbau for 8.5 miles and lie up to three miles offshore. Several of these reefs dry, including Recifes Patachos, the S most of the chain. A shoal, with a depth of 7.3m, lies 11 miles SE of Ponta Corumbau.

Numerous shoals, with depths of less than 20m, lie up to 35 miles offshore between Ponta Cumuraxatiba and Ponta Guaratibas, 20 miles S. Vessels on passage off this coast are advised to keep in depths of over 30m.

Pilotage is available and vessels are boarded outside the reefs. There is a small pier used by coastal vessels.

Anchorage may be obtained by small vessels with local knowledge in a cove on the N side of Ponta Cumuraxatiba, with the chain of reefs off the point. It offers good shelter even during fresh NE winds. The cove is entered through a break in the reefs with a depth of about 15m. The anchorage in its N part has a depth of about 5m, and from about 2.5 to 3m in its S part.

A beacon stands close within the edge of the reef on the N side of the entrance. Some of the shoals in the S part of the cove are marked by wooded perches.

### Cumuraxatiba to Caravelas

**3.21 Barra do Prado** (17°22'S., 39°13'W.) lies about 16 miles S of Ponta Cumuraxatiba at the mouth of the Rio Jucuru. The bar has a dangerous approach even in good weather. Small boats navigate the river for a distance of 18 miles above its mouth. The town of Prado stands near the coast within the entrance to the river.



Anchorage may be taken with the town of Prado bearing 234°, distance 2.3 miles in 8 to 10m, sand and mud. This anchorage is sheltered from all winds except N, NE, or E.

Barreiras do Prado, a series of uninterrupted conspicuous red cliffs, begin 3 miles SSW of Ponta Cumuruxatiba and mark the coast for a distance of 9 miles to the S to within 2.5 miles of the town of Prado. The cliffs are the best landmarks along this stretch of the coast. A light is shown from a position on the coast about 11 miles S of Ponta Cumuraxatiba and 3 miles N of Prado.

Recifes do Prado, about 0.7 miles in extent, lie about 4 miles ESE of the church in Prado. These sand and coral dangers uncover at LW and depths of 10.9m surround the reefs about 0.5 mile off their outer edge.

From Barra do Prado to Ponta Guaratibas, 4.5 miles SSE, the coast consists of a low beach, covered with vegetation of a uniform height.

**Recifes de Guaratibas** (17°26'S., 39°08'W.), two drying reefs, lie on a bank with depths of less than 5m, 3.5 miles ENE of Ponta Guaratibas. A channel, with depths of over 5m, exists between the bank and the coast, but should only be used with local knowledge. Recifes das Timbibas, an extensive group of drying reefs, lies 7 to 12.5 miles ESE of Ponta Guaratibas.

From Ponta Guaratibas to Barra de Alcobaca, 8 miles to the SE, the coast is covered with vegetation and is visible about 12 miles offshore. The only landmark is the town of Alcobaca, which is fairly prominent from offshore. A light is shown 2 miles N of the church in Alcobaca.

**Ponta da Baleia** (17°41'S., 39°08'W.), lying 8.5 miles SSW of Barra de Alcobaca, is the most salient point on this coast and is covered with vegetation. Ponta da Baleia Light is situated near the point. Caravelas Aero Light is situated 6.5 miles WNW of Ponta da Baleia.

Between Ponta da Baleia and Ponta do Catoeiro, 12.5 miles SW, the coast consists of a low beach backed by scattered coconut palms. There are two prominent groups of palms SW of the mouth of Rio Caravelas. Ponta do Catoeiro is not easily distinguished from seaward, but shows a light.

**Parcel das Paredes** (17°49'S., 38°57'W.), an extensive shoal of coral and sand, parts of which are above-water, lies from 6.5 to 19 miles SE of Ponta da Baleia, its N extremity in Pedra Lixa.

The reef is an excellent fishing area, and also provides good shelter for fishing craft under the lee of its W side. The fishermen mark the dangers and channels in this vicinity with perches.

A number of other reefs are reported to surround Parcel das Paredes.

The surrounding area is dangerous for navigation due to uncharted shoals. A light is shown from Coroa Vermelha, a coral reef which uncovers at LW, 16 miles SW of Parcel das Paredes.

**3.22 Porto de Caravelas** (17°44'S., 39°16'W.) lies 6 miles upstream from the mouth of the Rio Caravelas. There is a concrete wharf in the port, 90m long with a depth of 4m alongside. There are also two piers at Ponta da Areia, 2 miles E of Caravelas, both of which can accommodate vessels drawing up to 2.6m. Local fishermen are used as pilots. The port has no commercial value and is used mainly by fishermen.

**3.23 Arquipelago dos Abrolhos** (17°58'S., 38°42'W.), a group of five islands of coral formation, lies 30 miles SE of Ponta da Baleia. The islands lie in about a 1.25 square mile area and are mostly free of vegetation.

Ilha de Santa Barbara, the largest of the group, is 0.75 mile long E and W, and about 0.1 mile wide. A lighthouse and two radio towers close by situated on the summit of the island and make excellent landmarks. The W part of the island is the larger and a group of buildings are seen near its end. A coral reef, which dries, extends 91m NW from the W end of the island. Ilha Guarita lies 0.25 mile NNW of the E end of Ilha de Santa Barbara.

Ilha Redonda and Ilha Siriba, which are linked by a drying coral reef on which there is a narrow ridge of sand, lie W and SW of the W end of Ilha de Santa Barbara. Ilha Redonda has a small group of coconut palms on a sandspit at the SE end of the island. Ilha Siriba is high on its E end and then slopes down to a beach at its W end and is covered with palm trees.

**Ilha Sueste** (17°59'S., 38°42'W.), 1 mile SSW of the E end of Ilha de Santa Barbara, is about 15m high with clumps of trees near its center and is surrounded by a drying coral reef on which the sea usually breaks.

Arquipelago dos Abrolhos is surrounded by dangers and many uncharted shoals exist in its vicinity. Extreme caution must be used when navigating in this area. The only approach to these islands, which is comparatively clear of dangers, is from the SW.

Tidal currents are regular except when influenced by the force and direction of the wind with average rates of from 1 to 1.5 knots. In the channel between the islands they follow the direction of the channel and attain a rate of 3 knots.

Anchorage may be obtained in depths of 10 to 12m, sand and shells, with Abrolhos light bearing about 042°, distance 0.4 mile. Vessels of light draft with local knowledge anchor N of Santa Barbara during S winds, in 10 to 12m, with the light bearing about 145°, distance about 0.6 mile. This anchorage is recommended only to small craft.

**3.24 Parcel dos Abrolhos** (17°59'S., 38°39'W.), a series of drying coral reefs, between which there are narrow shallow channels, lies about 3 miles E of the light on Ilha de Santa Barbara.

The reefs cover about 7 miles in a N to S direction and about 3 miles E to W.

A spit, with less than 10m, extends 12 miles NNW from the N extremity of the drying reefs and numerous detached shoals with similar depths, extend up to 7 miles SE of the reefs and terminates in Recife Calafornia, a shoal with a depth of 5.9m, located 12 miles SE of Ilha de Santa Barbara light.

A stranded wreck lies in the middle part of Parcel dos Abrolhos. Banco Caladas, with a depth of 9.2m, lies about 15.5 miles NNE of the stranded wreck.

The limits of Parcel dos Abrolhos are not well defined and shoals are constantly being reported outside the charted limits. Vessels should pass at least 15 miles to the E of Ilha de Santa Barbara light.

Fishing is extensively carried on in this area. Ships passing SE of Parcel dos Abrolhos often encounter fishing fleets, which are comprised of one or two larger vessels tending numerous

rowboats. At night the rowboats exhibit a torch on the near approach of other ships.

Canal dos Abrolhos separates Arquipelago and Parcel dos Abrolhos from Parcel dos Paredes. The channel is about 10 miles wide, but there are numerous dangers. It was reported that a depth of only 5.5m could be carried through it.

The channel should only be used by ships with drafts under 5m. Large ships should not navigate the channel without local knowledge.

## Off-lying Islands and Banks

**3.25** The banks which extend into the S Atlantic from the E coast of Brazil, between the parallels of 16°S and 21°S, form two main groups.

The N group extends 220 miles E from the coast between Ponta Corumbau and Arquipelago dos Abrolhos, and the S group, which terminates in Ilhas Martin Vaz, extends 660 miles E from the coast in the vicinity of Baía de Espiritu Santo. Depths of over 1,000m approach the coast within 120 miles between the two groups.

**3.26 Northern group.**—Sulfer Bank lies 84 to 120 miles E of Ponta Corumbau. Two seamounts, with their surrounding shoals, rise out of depths in excess of 2,000m. Banco Minerva, with a least depth of 13m, is composed of coral tinted with sulfur. Banco Rodger, located ESE of Banco Minerva, has a least depth of 44m, although a depth of 12m, existence doubtful, has been reported on the bank.

**Hotspur Bank** (17°50'S., 35°55'W.) lies 160 miles E of Arquipelago dos Abrolhos and has a minimum depth of 23m.

**3.27 Southern group—Eclaireur Bank** (Sylvia Bank) (20°19'S., 37°46'W.) lies 150 miles E of **Baía de Espiritu Santo** (20°19'S., 40°16'W.) and has a minimum depth of 77m.

Depths of 38m and 37m lie 12 miles N and 20 miles SSW, respectively, of this bank. A depth of 2.4m has been reported (1994) to lie approximately 20 miles E of this bank.

Vitoria Bank is an extensive area, with depths of less than 183m, lying from 110 to 175 miles E of Baía de Espiritu Santo. It has a minimum depth of 33m located in 20°40'S, 37°43'W; shoals, with depths of 27m and 34m, lie 26 miles WNW and 2 miles, respectively, NE of Vitoria Bank.

Congress Bank, with a least reported depth of 37m, lies 32 miles NE.

Montagu Bank, lying 200 miles E of Baía de Espiritu Santo, has a minimum depth of 58m. An isolated shoal, with a depth of 53m, was reported to lie 15 miles ENE of Montagu Bank.

Jaseur Bank has a minimum depth of 11m and lies at 20°30'S, 36°10'W. An isolated bank, with a minimum depth of 30m, lies 20 miles ESE of the E extremity of Jaseur Bank.

Davis Bank, with a least charted depth of 20m, lies 50 miles E of Jaseur Bank.

Dogaressa Bank, with known depths of 54m and 110m, lies 60 miles ESE of Davis Bank.

**3.28 Ilha da Trindade** (20°30'S., 29°20'W.), about 3 miles long NW to SE and up to 2 miles wide, lies approximately 600 miles off the E coast of Brazil. The island is mountainous and of volcanic origin.

Pico Desejado, the highest, rises to a height of about 600m near the center of the island, and can be seen 40 miles away in clear weather.

The island is fringed by several reefs and rocky ledges on which the sea breaks heavily.

These dangers extend up to 0.2 mile from the shore. There are a few beaches on which landings are possible providing the winds are favorable. Prevailing winds are E and NE.

A light is occasionally shown from Ponta do Valado, about 1.25 miles SE of the NW extremity of the island.

A lighted range, at the head of Enseada dos Portugueses, on the NE side of the island, serves as a range for the anchorage in the bay.

At the SE end of the island there is a natural tunnel which lies under the E slope of Morro do Paredao. When the sea is calm, an islet can be seen by looking through the S entrance of the tunnel.

Pico Monumento, a remarkable peak in the form of a slightly inclined cylinder, rises from the W coast of the island about 1 mile SSW of Ponta Crista de Gallo, the N extremity of the island.

**Anchorage.**—The usual anchorage is in Enseada dos Portugueses where a small settlement is located. Due to the many dangers to navigation, approach to the anchorage should be done only during daylight hours.

Vessels anchor on the range about 0.2 mile off the beach, in depths of 16 to 17m. Smaller vessels can anchor in 9m on the same range, about 0.1 mile from the beach.

Vessels can anchor in 49m about 0.5 mile NNE of **Ponta das Tartarugas** (20°31'S., 29°18'W.).

Enseada do Principe affords anchorage off the S side of the island, 0.2 mile W of Laje do Paredao, in a depth of 22m. Pedra do Meio, on which the sea breaks, lies near the middle of the bay and should be given a wide berth.

Anchorage can be obtained in Enseada da Cachoeira in 31m, about 0.5 mile SSE of Ponta da Cachoeira.

**3.29 Ilhas Martin Vaz** (20°30'S., 28°51'W.) This consists of four small barren islands of volcanic origin, and lie about 26 miles E of Ilha da Trindade.

Ilha Martin Vaz, the largest of the group, is rocky and steep rising to an irregular plateau with several peaks.

The highest peak reaches an elevation of 175m and lies near the NW end of the island. The shores of the island are strewn with boulders and are usually surf-bound.

Many years ago, a British party effected a landing on the W side of the island about 0.1 mile from its N extremity.

Ilha do Norte, 75m high, lies 0.2 mile NNW of the N end of Ilha Martin Vaz. A flat rock about 0.6m high lies off its S extremity and similar rocks extend S for nearly 137m.

Ilote Angulha is a flat circular rock, 60m high, lying 200m off the NW extremity of Ilha Martin Vaz. There is a sharp pinnacle at its S end.

Ilha do Sul is a rocky pinnacle, lying 1 mile S of Ilha Martin Vaz. There is a depth of 35m, 0.75 mile NW of Ilha do Sul, the bottom is rocky and visible, with depths decreasing gradually toward the island. A submerged rock has been reported to lie 1 mile SW of Ilha do Sul.

Laje Valhalla, a flat-topped submerged rock with a probable depth of less than 4m, lies about 1.7 miles W of the N

extremity of Ilha Martin Vaz. Depths of 9.1m have been reported close off the rock.

Anchorage can be taken in 53m, sand, with the S end of Ilha Martin Vaz bearing 064°, distance 1.2 miles. The bottom, which was generally sandy, was found to shelve gradually NE toward the above-mentioned bank.

## Ponta do Catoeiro to Vitoria

**3.30** From Ponta do Catoeiro to Barra de Nova Vicosá, 4.5 miles to the WSW, the coast has denser and more uniform vegetation than to the N of the point. The coast continues to have a similar aspect as far as the mouth of Rio Mucuri, 22 miles SW of Ponta do Catoeiro.

**Barra de Nova Vicosá** (17°54'S., 39°21'W.), 1 mile wide, is the mouth of Rio Peruípe, which trends N for 1.5 miles from its mouth to its junction with the channel leading to Rio Caravelas and then turns W.

Vila de Nova Vicosá stands on the S bank of Rio Peruípe, 3 miles above its mouth. The entrance of Nova Vicosá is subject to major changes.

Only mariners with extensive local knowledge should attempt sailing through it.

A conspicuous chimney stands in the town and is the best landmark as the coast is without any prominent features. Approaching from the S the chimney is visible off the mouth of the Rio Mucuri.

Sandbanks extend 2 miles SE from the mouth of Rio Peruípe and between them is a channel by which vessels of up to 4m draft, and with local knowledge, can enter the river at HW. Banco do Cascalho, extending from the NE entrance point, dries up to 0.75 mile offshore.

Several detached drying sandbanks, the outermost of which is Coroa do Bagre, extend up to 1.5 miles ESE from the SW entrance point. A buoy marks the approach to the channel between the sandbanks and is moored 2.5 miles SE of the mouth of the river. A pilot may be obtained at Caravelas.

The offshore tidal currents set N and S, with a velocity of 1.5 knots. The ebb current, which sets to the S, is slightly stronger due to the discharge of the Rio Peruípe.

Between the entrance buoy and Pontal do Sul, the ebb current sets to the W toward the dangers lying on the W side of the entrance and the flood current sets to the E toward Banco do Cascalho.

At spring tides the velocities of the currents reach 4 to 5 knots.

Anchorage may be obtained within the river mouth, 0.75 mile N of Pontal do Sul, in depths of about 6m.

Caution is necessary when approaching and entering the river. The winds have little or no effect on the tidal currents in the entrance.

**3.31 Rio Mucuri** (18°06'S., 39°34'W.) lies about 15.5 miles SW of Barra de Nova Vicosá. The entrance to the river can easily be identified by a group of houses comprising the village of Mucuri, which stands on the N shore of the river's mouth. A large house with a yellow roof is prominent and is visible for about 7 miles offshore.

The bar at the mouth of the river has a reported depth of about 1m. Small craft can navigate the river for a distance of 105 miles.

Anchorage is afforded 1 to 1.5 miles ESE of the bar in depths of 5.5 to 7m, sand, good holding ground.

Barreira das Velhas, 10 to 14 miles SSW of Rio Mucuri, are reddish cliffs about 30m high and conspicuous between the adjacent sandy shores.

Ponta Lencois is 1 mile S of the cliffs and is named because of its white cliffs which resemble a row of white houses.

**3.32 Rio Sao Mateus** (18°37'S., 39°44'W.) is located about 17 miles SSW of Ponta Lencois. The entrance to the river can be identified when approaching from the N by an isolated group of palms which have the appearance of an islet.

When approaching from the E or S the large white sand dunes which mark the coast about 2 miles S of the river mouth aid in its identification.

These dunes are observed before the houses in the village of Corceicao da Barra, which is located on an islet on the N side of the river mouth.

Access to the mouth of the river is dangerous because of the breakers, the fronting shoal, and the rough sea which often runs there. The bar has a depth of 2.5m at high water springs. A light is shown close S of the village.

Pilotage is compulsory. Pilots board seaward of the shoals off the mouth of the river.

The town of Sao Mateus is located 12 miles above the mouth of the river and can be reached by small craft. The town has a pier 25m long with depths of 3.6m at its head.

**Barra Seca** (19°05'S., 39°43'W.) is located about 30 miles S of Barra do Sao Mateus. A lighted platform and mooring buoys stand 4 miles E of Barra Seca.

A submarine pipeline lies in a NW direction between the platform and the coast. Navigation within 500m of the facilities is prohibited.

## Rio Doce

**3.33 Rio Doce** (19°38'S., 39°49'W.), whose mouth lies 64 miles S of the Rio San Mateus, is about 390 miles long and navigated by shallow draft vessels as far as **Cidade de Colatina** (19°32'S., 40°37'W.), 62 miles above its mouth. Small craft can navigate an extra 63 miles to Vila de Figueira.

The mouth of the river can be identified by its breakers and by three small hills rising a few miles to the NW of it. A conspicuous building stands about 3 miles N of the mouth. At times the approach to the river is indicated by large areas of reddish-colored river water. A light is shown near the W entrance point of the river.

Sandbanks and shoals, which dry in places, front the mouth of the river and extend 3 miles SE from the E entrance point, and they are continually shifting. There are heavy breakers over these dangers.

The sea breaks up to 2 miles seaward of them, especially during SE and SW winds.

A submarine pipeline extends 2 miles from the coast 1.5 miles WSW of Rio Doce Light. The seaward end of the pipeline, with six mooring buoys close by, is marked by a lighted buoy.

The mooring buoys can accommodate tankers up to 50,000 grt and a maximum draft of 13m.

The river can be entered by small craft with local knowledge drawing less than 1.5m.

The most favorable conditions for entering are during N winds, as the entrance is difficult with winds from other quarters.

Pilotage is available and advance notice of time is desirable.

Small vessels, with local knowledge, can anchor within the mouth of the river off Vila de Regencia, depth of 3.7m, but should moor head and stern as the swinging room is restricted.

**Terminal da Aracruz** (19°50'S., 40°05'W.), also known as Barra do Riacho or Portocel is situated near the mouth of the Rio Riacho, about 17 miles SW of Rio Doce light.

The terminal is protected by breakwaters. It has a pier 230m long, with a depth of 10.7m alongside, and the maximum beam allowed is 35m. The following restrictions apply:

Daylight	Length up to 190m.
	Entrance draft of 7.8m turning vessel before berthing or 9m without turning.
	Sailing draft of 9m without turning or 7.8m with turning.
Night	Length up to 110m. Maximum draft of 7.7m.

Pilotage is compulsory and pilots are requested from Vitoria and board vessels about 1 mile E of the harbor entrance.

The port is used for the export of cellulose from the nearby Aracruz plant, which is prominent from seaward.

A power station, which gives a good radar response and has been identified visually from distances of up to 20 miles, is located 2 miles SW of the river mouth.

A submarine pipeline extends seaward for 0.6 miles from the elbow of the S breakwater. A light is shown close NW of the entrance and at the head of each breakwater.

From the mouth of the Rio Riacho to **Baia do Espirito Santo** (20°18'S., 40°16'W.), a distance of 29 miles, the coast trends SW and then SSW toward the bay.

The sandy shore becomes higher and is broken by numerous small reddish cliffs. Reefs extend about 1 mile offshore in places.

Serra dos Aimores, a mountain range, backs and roughly parallels this stretch of coast. The first summits of the range, visible from seaward, have the appearance of a series of small, conical, and slightly flattened hills.

**Serra do Cavalo** (19°54'S., 40°21'W.) has a wavy summit with three peaks, and is located 34 miles WSW of the mouth of Rio Doce. Morro do Feijao, a moderately high mountain with remarkable reddish cliffs on its summit, is located about 16 miles NNW of Serra do Cavalo.

**3.34 Monte Mestre Alvares** (20°10'S., 40°19'W.) lies about 16 miles S of Serra do Cavalo and 9 miles NNW of Baia do Espirito Santo. Isolated and densely wooded, it is visible for nearly 60 miles, and is the most conspicuous peak on this part of the coast.

**Barra de Santa Cruz** (19°57'S., 40°08'W.), 24 miles SW of the mouth of Rio Doce, is the common of Rio Piraque-Acu and Rio Piraque-Mirim, which unite 1.5 miles to the W.

It can be identified by the adjacent mountains and by Vila de Santa Cruz, which stands on the S side of the river entrance, but is only visible from NE. A school building stands on the N side of the river entrance. Pontal de Tacipeba, the N entrance point of the river, is low and sandy.

Ponta de Santa Cruz, the S entrance point, is prominent because of its wooded cliffs. A dangerous submerged reef extends 1.5 miles from the latter point. There are reefs and shifting sandbanks with the river mouth.

Anchorage can be obtained off Vila de Santa Cruz in depths of from 6 to 8m with good shelter from wind and swell. The entrance to the river is dangerous and should not be attempted without local knowledge.

**3.35 Barra do Almeida** (20°03'S., 40°11'W.), the entrance of the Rio Reis Magos, lies between Ponta dos Frecheiros and Ponta Capuba, 2 miles to the SSW.

Ponta Capuba can be easily identified by its red cliffs and in the city of Nova Almeida, there is an old convent with a visible church.

The village of Nova Almeida is situated on the S bank of the mouth of the river. Small craft navigate the river for up to 18 miles from the mouth.

Shoals completely obstruct the mouth of the river which can be approached only by small craft at HW.

Barra do Rio Jacareipe lies about 6 miles S of Barra do Almeida. The white houses in the town of Jacareipe, situated on the S bank of the river mouth, stand out against the dark wooded hill on which they are built.

**Baixo do Carapebus** (20°15'S., 40°10'W.) is a rocky shoal with a reported (1991) depth of 4.5m.

## Baia do Espirito Santo

**3.36 Baia do Espirito Santo** (20°18'S., 40°16'W.) indents the coast to a distance of 2.5 miles to the W and NW.

The entrance to the bay is about 2.5 miles wide between Ponta do Tubarao, the NE entrance point, and Ponta de Santa Luzia, the SE entrance point.

A light is shown from Ponta de Santa Luzia. Morro Moreno is 194m high and stands about 0.5 mile W of Ponta de Santa Luzia Light.

The bay contains the ports of Vitoria and Tubarao, together with Praia Mole, a new port developed on reclaimed land S of Tubarao.

The N part of the bay is shallow and a mass of breakers during SE winds.

Two islands, Ilha do Boi and Ilha do Frade, and several small islets lie in the SW part of the bay, N of the entrance of the estuary which leads to the port of Vitoria.

The W shore of the S side of the bay is formed by Ilha do Espirito Santo, a large island separated from the mainland by Rio de Passagem, a narrow shallow channel which is the smaller outlet from a lagoon formed by Rio de Santa Maria to the W of the island.

The main outlet from the lagoon is Estuario de Santa Maria, a channel which passes S of the island and forms the harbor of

Vitoria. Rio de Santa Marie is navigable for nearly 33 miles to Cidade de Cachoeira de Santa Leopoldina.

The S part of the bay, near the approach channel to Vitoria, contains a number of reefs and rocks which are marked by beacons and buoys, and is seen on the applicable harbor chart.

There is a mandatory Ship Reporting System for the ports of Vitoria and Tubarao. It operates on VHF channels 16, 11, 12, and 68.

Vessels should report on passing a line between Ponta de Santa Luzia light and Praia Mole (inbound), on anchoring, leaving anchorage, changing berth, and leaving berth (outbound).

Reports should include vessel's name, call sign, flag, port of departure (inbound), port of destination (outbound), type of vessel, anchorage or berth (inbound), estimated date of arrival at destination (outbound), estimated date of departure (inbound), and cruising speed (outbound).

Vessels shifting anchorage or berth report vessel's name, call sign, and present position.

Reports are to be in Portuguese; request assistance in transmission from pilot, pilot station, Vitoria (PPV) on VHF channel 16, or agents as necessary.

Vessels unable to contact the Control Post should inform the Harbor Master of Vitoria or Tubarao stating vessel's name, date, time, and reason for not reporting.

### Port of Vitoria (20°19'S., 40°20'W.)

[World Port Index No. 12850](#)

**3.37** The port of Vitoria is approached through the estuary of Rio Santa Maria, 4 miles long, which is entered between Ponta do Tagano and Ilha do Boi, 0.5 mile NNW.

The channel passes between Ilha do Espirito Santo and the mainland, both of which have a number of off-lying islets. Hills rise from both sides of the channel.

### Winds—Weather

The prevailing winds are from the SE. The port area is protected from all winds.

### Tides—Currents

The tidal range at springs is 1.4m and the range at neaps is 0.6m. The maximum draft is 11m at HW and 9.7m at LW.

The velocity of the tidal current varies from 2 to 3 knots, but at times it reaches 5 knots. Abreast the port the tidal currents were observed to have a velocity of 4 knots at springs. About 0.2 mile E of Pedras das Argolas the ebb current sets NE toward the wharf and the flood current sets WSW.

### Depths—Limitations

All sailing is to take place on a rising tide. Vessels of up to 205m can enter the port day or night. Vessels from 205 to 242m can enter the port during daylight hours only, weather permitting. Vessels of this length must be assisted by three tugs, two of which must be at least 1,000 hp and the other of at least 400 hp.

The maximum draft for the port is 10.7m at HW and 9m at LW. The maximum speed in the channel is 5 knots. Vessels may only leave port on the flood tide.

The access channel, 3.5 miles long, is only 120m wide, except abreast Ilha das Bombas where it is only 92m wide.

Overhead cables, with clearance of 55m, span the river at two points. A bridge, with a vertical clearance of 53m, crosses the river 0.5 mile W of Ponta do Tagano.

The commercial quay, a marginal wharf with a length of 890m, parallels the N side of the estuary at Vitoria. The wharf consists of five berths. Vessel limitations at each berth are described below.

Capuaba, on the S side of the channel abreast Vitoria, has two ore-loading wharves, one 11m long with 10.9m alongside and the other 160m long with 9.4m alongside.

Cais da Usiminas, located W of the above berths, is also an ore loading terminal. It can accommodate vessels up to 73m long and with a draft of 9.4m.

There is also an oil terminal on the S side of the channel, consisting of a pier with dolphins which can accommodate vessels with a draft of 8.2m.

There are five major port facilities at Vitoria:

1. Wharf No. 1 accommodates vessels with a maximum vessel length of 182m and a maximum draft of 8.6m.
2. Wharf No. 2 accommodates vessels with a maximum vessel length of 182m and a maximum draft of 8.3m.
3. Wharf No. 3 accommodates vessels with a maximum vessel length of 155m and a maximum draft of 8.5m.
4. Wharf No. 4 accommodates vessels with a maximum vessel length of 120m and a maximum draft of 3.9m.
5. Wharf No. 5 accommodates vessels with a maximum vessel length of 100m and a maximum draft of 5m. It is used only by fishing and coastal vessels.

### Aspect

The mariner coming from the N should recognize the mounts located on the N of Espirito Santo bay, visible at a great distance, among which Mestre Alvares stands out.

Closer to the bay appear the mounts of Frade Leopardo, Moreno and Penha, the latter with the convent of Our Lady of Penha on its summit. Then, Tubarao point, with the installations of the terminals of Praia Mole and Tubarao and where there is a reservoir and a chimney very visible; Saint Luzia point, with its lighthouse and more to the S Pacotes Island with its beacon.

When approaching the bar the mariner should navigate outside the 20m contour.

The mariner coming from the S should sight Escalvada island, with its lighthouse, and to the NW the city of Guarapari, with its many buildings; the coves of Guarapari and Perocao; and more to the N, in the interior, several mounts.

Nearing Espirito Santo bay, the same mounts and visible points sighted by the mariner coming from the S appear between Escalvada and Pacotes islands.

The mariner should also navigate the vessel outside the 20m curve.

Morro Moreno, 194m high, an excellent mark for identifying the entrance to the bay, rises 0.5 mile W of Ponta de Santa Ouzia.



Morro da Penha, 155m high, on the summit of which there is a ruined convent which is marked by a red obstruction light, is surmounted by an illuminated cross, floodlit from 2000 until 2300, 1.25 miles WSW of Ponta de Santa Luzia. An old fort stands 0.3 mile N.

### Pilotage

Pilotage is compulsory and is available 24 hours daily. The approximate time of arrival should be sent to the pilot office at least one hour in advance. The pilot station is located on Ilha dos Práticos, close E of Ponta do Tagano.

Pilots board ships from a red launch with a black "P" on either side and meet ships about 0.7 mile E of Ponta de Santa Luzia.

### Anchorage

Vessels bound for the port of Vitoria, and awaiting a pilot, anchor about 1 mile ESE of Ponta de Santa Luzia, in depths of about 20m. Vessels awaiting pilots for Porto do Tubarao should anchor about 2 miles E of Ponta de Santa Luzia, in depths of 24 to 27m, about 0.7 mile NE of the buoyed channel to the port.

Within the port of Vitoria, anchorage may be obtained between Recife de Sao Joao and Pedras dos Argolas, in depths of 6 to 11m, mud. This anchorage is restricted to a width of about 0.1 mile.

### Tubarao (20°17'S., 40°15'W.)

World Port Index No. 12855

**3.38** The new port of Tubarao is located on the W side of the S extremity of Ponta do Tubarao, the NE entrance point of the Baía do Espirito Santo. The port of Tubarao has become the largest iron ore port in the world, with an annual export of 70 million tons.

**Tides—Currents.**—The characteristic semidiurnal tide predominates in the port and since it is an artificial port and relatively open, there are no appreciable currents to be noted.

**Depths—Limitations.**—The channel to the buoyed approach channel to the port, lies about 1.5 miles ESE of Ponta de Santa Luzia. The channel is two miles long with a width of 280m and dredged to a depth of about 22m.

The maneuvering area for berthing and unberthing has a width of 150m along the length of the quay. The maneuvering basin has a diameter of 500m and a depth of 18m.

The port consists of a breakwater, with a tanker berth on its inner side, and two ore loading piers, 0.1 mile and 0.3 mile, respectively, NW of, and parallel to it.

The larger of the two ore piers, with a berth 350m long on its S side, can accommodate ships up to 275,000 dwt and has a depth of 21.5m alongside.

The smaller pier, with a 340m long berth on either side can dock ships in the 100,000 dwt class and has a depth of 12m alongside.

The tanker berth has a depth of 12m alongside, but can only accommodate a vessel 160m long, with a maximum draft of 7.9m.

Silting was reported between the smaller ore berth and the tanker pier.

Praia Mole, comprising a coal and steel terminal, is approached through a dredged channel which had a reported limiting draft of 14m.

The coal terminal, lying on the S side of the harbor immediately N of the jetty, is 730m long.

Berth No. 1, which can handle vessels of 15,000 to 170,000 dwt, is 330m long with a depth of 17m alongside.

Berth No. 2 is 400m long, with a depth of about 18m alongside. Berth No. 2 will be able to handle vessels of up to 250,000 dwt after it is dredged to 21m; however, the present depth is 18m.

The steel products terminal, lying on the N side of the terminal, fronts an area used for handling and storage located on reclaimed land just S of Ponta do Tubarao.

The quay, which is 638m long, can accommodate vessels of 15,000 to 70,000 dwt and has a depth alongside of 14.5m.

The SE breakwater has been extended about 0.2 mile to the WSW.

Lights are shown from the head of each breakwater and from the elbow of the SE breakwater.

**Pilotage.**—Pilotage is compulsory and pilots will board at the Tubarao anchorage or 0.5 mile SSE of the entrance buoys.

**Anchorage.**—See anchorages listed under Vitoria.

**Caution.**—A moderate speed is reported to affect the berths at Praia Mole.

### Vitoria to Cabo de Sao Tome

**3.39** The coast between Ponta de Santa Luzia and Cabo de Sao Tome, 110 miles to the SW, is backed by mountainous country containing peaks which rise to heights of over 900m within 25 miles of the sea, and are remarkable for their pyramidal shape. These mountains are prominent in clear weather, but are frequently obscured as the low land between them and the coast is often covered with fog or haze. They are usually most clearly seen about sunrise.

**Ilha dos Pacotes** (20°21'S., 40°15'W.), a small low island bare of vegetation, from which a light is shown, lies nearly 2 miles SSE of Ponta de Santa Luzia. A reef, part of which uncovers, extends about 0.3 mile SW of the island. Breakers mark this danger.

Ilha das Garcas, an islet, lies about 0.7 mile offshore and 3 miles SW of Ilha dos Pacotes. A small islet lies close on its SW side.

**Ilhas Jucu** (20°25'S., 40°19'W.), two small islets close together, lie about 0.5 mile ENE of Ponta Jucu. The islets are always visible above water. Rio Jucu enters the sea on the N side of Ponta Jucu and the village of Jucu stands on the S bank of the river near the point. A conspicuous white water tower stands 1.25 miles WSW of Ponta Jucu.

Ponta da Fruta lies about 6 miles SSW of Ponta da Jucu and is identified by a conspicuous white church, which stands on a hillock above the point. Between Ponta Jucu and Ponta da Fruta, reefs extend up to 1 mile off the coast.

Laje Canopus, an islet, lies about 0.3 mile SSE of Ponta da Fruta and sunken rocks, over which the sea breaks, lie about 0.3 mile SSW of the islet.

**Baixo do Una** (20°33'S., 40°21'W.), a rocky shoal with a depth of 5.8m, lies about 2 miles SSE of Punta da Fruta. The sea occasionally breaks over this shoal. Another rocky shoal, with a depth of 8.4m, lies about 2.5 miles S of the point.

**Ponta da Setiba** (20°39'S., 40°26'W.), about 8 miles SSW of Ponta da Fruta, is marked by a 64m high hill, with sparse vegetation on its upper side.

Tres Ilhas, a group of three islands, lie about 2 miles offshore in a position 3.5 miles ENE of Ponta da Setiba. The islands and other islets of less importance comprise an archipelago. A channel about 1 mile wide lies between the coast and the archipelago.

**Ilhas Rasas** (20°41'S., 40°22'W.) lie about 4.5 miles SE of Ponta da Setiba and consist of two rocky islets with a height of 2m. Submerged rocks lie as far as 0.3 mile SE of the islets.

Ilha Escalvada, a sandy islet, lies 2.5 miles WSW of Ilhas Rasas and shows a light. The islet is visible for a distance of 7 miles.

Ships may pass between Ilhas Rasas and Ilha Escalvada in depths of 33m. A rock, with a depth of 9.2m, lies 4.5 miles WSW of the islet and 2 miles offshore.

**3.40 Rio Guarapari** (20°40'S., 40°30'W.) empties into the SW part of Enseada de Guarapari and can easily be identified by its S entrance point which rises to a 21m hillock with a reddish cliff; this cliff is the first of its kind sighted when proceeding from N. A conspicuous church stands on the summit of the hillock.

The town of Guarapari stands on the S bank of the river near its mouth, but is of little importance. The village of Muquicaba stands on the N bank opposite the town.

Vessels with local knowledge can anchor in the W part of Enseada de Guarapari, close E and on the N side of the river mouth, or 0.5 mile E of the church above the S entrance point. These berths have depths of from 9 to 10m, mud, and are sheltered from N winds.

Vessels drawing up to 4.5m can cross the bar at HWS and anchor off the town in depths of 6.5 to 7.7m. Swinging space is restricted, so vessels must moor head and stern.

Within the river mouth, a wharf about 76m long has a depth of less than 10m alongside. Private individual pilotage service is available.

From Rio Guarapari to Ponta dos Castelhanos, about 13 miles to the SW, the coast consists alternately of small beaches and red cliffs. The cliffs are visible for about 10 miles.

Morro Urubu, 3.5 miles from the coast, is the most prominent hill and a good landmark.

The only settlements on this part of the coast is the village of Meaípe, about 4.5 miles SSW of Guarapari, and the small village of Ubu, about 3 miles NE of Ponta dos Castelhanos.

Between Guarapari and Ponta dos Castelhanos, reefs and sunken rocks lie and extend as far as 1 mile offshore. Depths of less than 20m lie as far as 11 miles ENE, 10 miles E, and 13.5 miles ESE, respectively, of Ponta dos Castelhanos.

## Ponta do Ubu Ore Terminal

**3.41 Ponta do Ubu Ore Terminal** (20°47'S., 40°35'W.) is located about 9 miles SW of the mouth of the Rio Guarapari. When approaching the terminal, the main characteristics points

are Escalvada Island, the mounts of Sela Grande and Urubu, and the lighthouse Ubu and Castelhanos point.

The terminal consists of a breakwater extending about 0.4 mile E and then 0.2 mile NNE from the shore. A jetty, 313m long, projects NNE from the breakwater, parallel to, and 183m inshore of its outer leg.

The W face of the jetty has 280m available for berthing with 17.9m alongside. The E face has 200m available for berthing with a depth of 15m alongside. Limiting draft for berthing as reported to be 12m.

The jetty is approached through a channel about 0.1 mile wide. The channel is maintained at a depth of 18m. Silting has been reported on the S side of the channel and NNE of the pier head.

A light is shown from a white pyramidal tower standing on the shore 0.5 mile N of the root of the breakwater. A conspicuous radio mast stands about 0.8 mile N of the root of the breakwater. Lights are shown from the head of the breakwater and the head of the jetty. Range lights, in line bearing 270°, lead through the center of the dredged channel.

A reef, about 0.2 mile in extent, with depths of less than 2m, lies with its center 0.5 mile SSE of the elbow of the breakwater. Patches, with depths of 9.7m, lie 0.75 mile SE and ESE of the elbow of the breakwater. Barra de Maimba, with a least depth of 5.4m, lies 0.8 mile NNE of the breakwater.

Vessels waiting to berth should anchor in a depth of 24m, 1.5 miles ENE of the head of the breakwater. Vessels of deep draft approaching this anchorage should take care to keep N of the shoal area, with depths from 15.5 to 18.3m, whose N extremity lies 5 miles E of the head of the breakwater.

Vessels arriving in ballast should comply with the following recommended arrival drafts, keeping in mind the shiploader's air draft of 25m:

30,000 to 40,000 dwt	6.1 to 6.7m
40,000 to 60,000 dwt	6.7 to 7.3m
60,000 to 75,000 dwt	7.3 to 7.9m

For larger vessels, the following is recommended:

75,000 to 100,000 dwt	7.9 to 9.1m
100,000 to 150,000 dwt	9.1 to 11m

Pilotage is compulsory and pilots should be requested from Vitoria.

**3.42 Baía de Benevente** (20°53'S., 40°42'W.) is an indenture in the coast that is between Ponta dos Castelhanos and Ilha do Frances, which lies about 8.7 miles SW of the point.

The N part of the bay indents the coast for about 2 miles and the Rio Benevente empties into the N part of the bay.

The town of Anchieta stands on the E bank of the river near its mouth. The town church is a prominent landmark.

Depths in the bay range from 5.5 to 9.1m. Depths of less than 20.1m lie as far as 18.5 miles E of Ilha do Frances.

Baixo da Tiagem, a dangerous rocky shelf which dries in places, extends 1.25 miles from Ponta dos Castelhanos. Baixo Grande, a rock with a least depth of 0.9m, lies 2.5 miles SW.



**Ponta do Ubu Ore Terminal**

The passage between this danger and Baixo da Tiagem has a depth of 4m, but should not be used without local knowledge.

The bar at the mouth of the river breaks with strong S winds and has a depth of 1.3m at LWS. The river is navigable by small craft with local knowledge for about 13 miles.

Anchorage may be obtained in the bay in depths of 9 to 15m, sand and mud bottom. Vessels are cautioned to keep clear of a dangerous wreck 3.5 miles WSW of Ponta dos Castlehanos.

Morro Aga, Ilha do Frances Lighthouse, and the church at Anchieta are good landmarks for clearing the dangers in the approach to the anchorage.

Ships approaching from the NE should pass S of Baixo Grande.

Rio Piuma discharges about 4.5 miles SW of the mouth of the Rio Benevente, and can only be navigated by small boats.

Ilhotas de Piuma, a group of three islets, lies close off the entrance to the river.

The village of Piuma stands on the S bank of the mouth of the river. A sheltered anchorage for small craft lies about 0.2 mile W of the S most Piuma islet.

**Ilha do Frances** (20°55'S., 40°45'W.), from which a light is shown, lies nearly 2 miles offshore. The island is connected to the shore by a tongue-shaped sandbank which has depths of less than 3.7m.

Anchorage may be obtained with Ilha do Frances light bearing 200°, distance 1.25 miles, in a depth of 9m.

A conspicuous water tower stands 2.5 miles WNW of Ilha do Frances.

**3.43 Ilha Branca** (21°00'S., 40°47'W.), from which a light is shown, lies about 1 mile E of the mouth of the Rio Itapemirim. Rocks, which uncover, lie close to the NE and SW points of the island.

The town of Itapemirim stands on the S bank of the river, about 3 miles within the entrance.

The position of the bar is subject to change. Depth over the bar was reported to be about 1m at HW. A pilot is available upon request by radio. The town of Itapemirim has a small pier with depths of 1 to 2m alongside.

The mouth of the Rio Itabapoana is located about 20 miles SSW of the entrance of the Rio Itapemirim. Prominent red cliffs and wooded hills mark the coast between the two rivers. Villages on some of the hills are visible about 10 miles from offshore. A conspicuous house stands on Ponta do Siri, about 8 miles SSW of Rio Itapemirim. The red cliffs are prominent between Ponta do Siri and Ponta do Cacurucaia, 2.5 miles SW of Ponta do Siri.

**Ilha das Andorinhas** (21°10'S., 40°53'W.) lies about 0.5 mile offshore SE of Ponta do Cacurucaia. A stranded wreck lies close to shore about 0.5 mile W of Ilha das Andorinhas.

**3.44 Rio Itabapoana** (21°18'S., 40°58'W.) is navigable by small craft for about 35 miles from its entrance. The town of Itabapoana stands on the S bank of the river near its mouth.

A light is shown from the S entrance point of the river.

The bar can be crossed at HW by small craft with drafts of 1.6m. Local knowledge is essential for approaching and entering the river. Reefs, which dry in places, lie as much as 2 miles E of the river mouth. The sea breaks continuously over the largest and most seaward of them.

Vessels can anchor about 1 mile offshore, either N or S of the reefs, according to the direction of the wind, in depths of 7 to 8m.

Ponta do Roteiro, marked by a light, lies 3.5 miles S of the mouth of Rio Itabapoana and can be identified by its low red cliffs. Ponta do Cacador is located 2.5 miles SSW of Ponta do Retiro. Reefs extend about 1 mile offshore between the two points. A stranded wreck lies on the reefs about 0.7 mile NE of Ponta do Cacador.

Between the mouths of the Rio Itabapoana and the Rio Paraiba do Sul, 19 miles to the S, depths of less than 10m lie as far as 4.5 miles offshore. Depths of less than 20m lie as far as 25 miles E of the mouth of Rio Paraiba do Sul.

**3.45 Rio Paraiba do Sul** (21°37'S., 41°01'W.), about 467 miles long, empties by way of three channels at its mouth.

Ilha do Lima and Ilha da Convivencia lie in the mouth of the river.

Gargau Channel, the N most channel, lies between the W side of Ilha do Lima and the mainland. It is accessible from the S part of Saco de Gargau and is navigable by small craft.

The middle channel, between Ilha do Lima and Ilha da Convivencia, follows a winding course in the midst of islets and shoals. Small boats navigate this channel when prohibited from using the principal entrance.

The main channel has a width of 0.2 mile between the S extremity of Ilha da Convivencia and the mainland coast.

The main channel, which leads across the bar, is narrowed by sandbanks, and the position of the bar is subject to change.

There is no interest to ocean navigation and its bar can only be approached by small vessels and with through knowledge of the area. The bar should not be attempted without local knowledge. Bar signals are displayed from a mast on the S side of the river entrance. The bar has depths of 2.2 to 2.4m at HWS.

The town of Sao Joao da Barra stands on the S bank, about 2.5 miles within its entrance. A light is shown from the S entrance.

Anchorage is afforded in Saco de Gargau in depths of about 10m.

From the mouth of Rio Paraiba do Sul to Barra do Acu light, 23 miles to the S, the coast is low and sandy with no distinctive features.

## Cabo de Sao Tome

**3.46 Cabo de Sao Tome** (22°00'S., 40°59'W.) is formed by a gradual change in direction of the coast, from S to WSW. The light towers and the radiobeacon tower are the only landmarks visible from seaward. From a distance of 3 miles, the low sweeping cape resembles a long line of breakers.

Acu Light is shown from the E side of the cape, about 6 miles NE of Cabo de Sao Tome light, which is shown from the SW side of the cape.

Banco de Sao Tome, with depths of less than 11m, extends 15 miles E from Cabo de Sao Tome lighthouse. Depths of less than 5.5m extend 6.25 miles offshore on the inner part of the bank.

Depths of less than 18m extend 17 miles E of Acu lighthouse. Submerged wrecks, with depths of 1.7m, lie up to 6.7 miles E of Sao Tome lighthouse.

The sea breaks heavily over the bank during S winds and the bank is subject to continual change. The sea breaks over the W end of the bank during fresh NE winds. The sea in this area is always discolored.

Canal de Sao Tome, between the S side of the cape and the inner end of the bank is navigable by vessels drawing up to 4m, but is not safe during S winds.

Anchorage may be obtained by small craft during N winds about 0.3 mile SE of Sao Tome lighthouse, in depths of about 5m, mud.

During strong head winds, a vessel may find it advantageous to give the cape a wide berth, as it has been ascertained that the strength of the current often increases as the depth decreases towards the shore.

Numerous platforms, submarine pipelines, mooring buoys, and support vessels of an offshore oilfield exist about 40 miles SE of Cabo de Sao Tome.

Mariners are advised and cautioned not to navigate within this area.

From Cabo de Sao Tome to Ponta Imbetiba, about 50 miles to the WSW, the coast is extremely low and sandy with scattered patches of vegetation. Pico do Frade, about 20 miles NW of Ponta Imbetiba, is very prominent, but it is frequently obscured by clouds.

**Barra do Furado** (22°06'S., 41°08'W.), about 5 miles SW of Cabo de Sao Tome lighthouse, has several houses and great palms around it. Canal Ubatuba, about 10 miles WSW of Barra do Furado, connects the sea with Lagoa Feia. The Rio Macae empties into Enseada de Macae about 1 mile NNW of Ponta Imbetiba.

**3.47 Ilhas de Santana** (22°25'S., 41°42'W.), a group of five islets, lie about 4 miles ESE of Ponta Imbetiba. Ilha de Santana, near the middle of the group shows a light and is the largest islet of the group.

The passage between the islets and the mainland to the NW is obstructed by a bank with a depth of less than 8m.

Pedra do Hermes, a rock with a least depth of 2.2m, lies 4 miles N of the light on Ilhas de Sonata. The sea does not break over this rock. Numerous rocks, with depths between 7m and 10m, lie between 1 and 3 miles ENE of Pedra do Hermes.

Rocks, with depths of 5m and 6.2m, lie about 0.8 mile and 1.5 miles SW, respectively, of Pedra do Hermes.

Anchorage may be obtained off a sandy beach on the NW side of Ilha de Santana in a depth of 12m, mud. Vessels should anchor 0.7 mile off the beach to avoid the submerged ledge which lies out side the line joining the entrance points.

This anchorage is open to NE and SW winds, which do not raise much sea. A vessel approaching the anchorage should pass SW of the islets which is clear of danger on that side.

Ilha dos Papagaios, from which a light is shown, lies about 0.5 mile ENE of Ponta Imbetiba. The islet is 22m high and wooded.

Pedra dos Moleques, a rock awash lies a little more than 0.5 mile E of Ilha dos Papagaios. The rock has the appearance of a buoy and can only be seen from a short distance. A reef, with three heads that have depths of 1m, extends 91m S from Pedra dos Moleques.

Pedra da Mula, with depths of less than 1m, lies 0.75 mile ESE and is marked by a lighted buoy on its S side. The sea breaks over the rock and it uncovers at LWS. The passage between Ilha dos Papagaios and Pedra da Mula should not be attempted.

**Caution.**—A lighted tanker mooring buoy lies about 3.2 miles ENE of the S extremity of Ilha de Santana.

Submerged gas and oil pipelines in the area may best be seen on the area chart.

**3.48 Baía de Imbetiba** (22°23'S., 41°46'W.) is entered between Ponta Imbetiba and Ponta do Forte, 0.6 mile to the N.

A prominent house is reported to stand on the summit of Ponta Imbetiba.

A ruined wharf on Ponta Imbetiba cannot be approached owing to submerged obstructions. There are depths of 4.7m between this point and Ponta do Forte.

Rio Macae can be entered by ships with drafts to 2.7m, but local knowledge is required. The river is navigable by small craft for about 30 miles.

At times, the outflow from the river discolors the sea for some distance from its mouth, giving the appearance of sandy shoals.

Rocks and a depth of 0.4m exist close S of the N entrance point of the river.

**3.49 Macae** (22°22'S., 41°46'W.) stands on a plain on the S bank of the river near its mouth. There is an offshore oilfield supply base located in Baía de Imbetiba. Three piers, protected by a breakwater, can handle vessels up to a draft of 5.7m. The approach channel, W of Ilha dos Papagaios, is marked by light buoys.

Anchorage may be obtained 0.25 mile N of Ponta do Forte in a depth of 4m, sand. Anchorage for larger vessels may be obtained 0.8 mile NE of Ilha dos Papagaios light in a depth of 8.2m.

**Caution.**—Pedra dos Moleques, a rock awash, with a below-water rock close S, lies about 0.5 mile E of Ilha dos Papagaios.

Pedra da Mula, with a depth of 1m, lies 1.25 miles E of Ponta de Imbetiba. Breakers occur over this rock when there is any sea running. The S side of Pedra da Mula is marked by a lighted buoy.

## Ponta Imbetiba to Cabo Frio

**3.50** The coast between Ponta Imbetiba and Cabo dos Buzios, about 22 miles to the SSW, is indented about 9 miles to the W by a large bay.

This coast, for the most part, is regular, low, sandy, and broken in a few places, namely in the vicinity of Ponta Itapebucu, Cabo dos Buzios, and Barra de Sao Joao, located about midway between the point and cape. Sunken rocks and

reefs fringe a great part of the coast and in places they extend about 1 mile offshore.

Sunken and above-water rocks lie as far as 3.5 miles offshore in places.

Numerous islets also lie off this part of the coast. The area chart is the best guide for locating these islets and dangers.

Between Ponta Imbetiba and Cabo dos Buzios, several hills and mountains are prominent from offshore.

The most conspicuous is Monte Grande (Pico de Sao Joao), with its slightly flattened summit, located about 4 miles inland.

The mountain is isolated and visible about 40 miles. It is the principal landmark for this part of the coast.

Pedra do Amorim and Pedra Alta, two rocks with depths of 9.8m and 9.5m, respectively, lie 1.5 and 3 miles ESE, respectively, of **Ponta dos Ostras** (22°32'S., 41°56'W.).

Small vessels, drawing up to 4m with local knowledge, can anchor in the mouth of Rio Ostras with good shelter.

**3.51 Barra de Sao Joao** (22°36'S., 41°59'W.), five miles SW of Ponta dos Ostras, has depths from 3.5 to 4m over the bar and similar depths within the mouth of the river. The town of Sao Joao da Barra stands near the mouth of the river. Ilha de Trinta Reis lies nearly 0.5 mile E of the river mouth. There are two other islets off and to the S of the river mouth.

Anchorage may be obtained 0.5 mile SSW of Ilha de Trinta Reis in depths of from about 8 to 10m, sand and mud.

**Ilha Branca** (22°43'S., 41°53'W.), from which a light is shown, lies about 10 miles SSE of Barra de Sao Joao and is close N of Cabo dos Buzios. Ilha Raza lies 4 miles WSW of Ilha Branca. Numerous above-water rocks and sunken reefs and rocks, some of which uncover, lie near Ilha Raza.

**Caution.**—Shoal patches, with depths of 15.8m and 17.6m, lie 0.9 mile NNW and ENE, respectively, from the light on Ilha Branca.

**3.52 Cabo dos Buzios** (22°45'S., 41°52'W.) is the extremity of a peninsula which is much indented and extends 3.5 miles NE from a low isthmus 0.5 mile wide. Enseada de Buzios is entered between Ponta da Matadeira and Ponta da Cruz. The village of Buzios, with a church, stands on the E shore of the bay.

Anchorage may be obtained in Enseada de Buzios about 0.3 mile WSW of Ponta da Matadeira, in depth of about 11m, and is sheltered from all except NE winds. Vessels are advised to approach this berth passing N of Ilha Branca and giving it a berth of at least 0.5 mile.

**Ilha Ancora** (22°46'S., 41°47'W.) lies 4.75 miles ESE of Cabo Buzios and is visible at a distance of more than 20 miles. Ilha Gravata lies about 2 miles W of Ilha Ancora. Two islets named Filhote lie about 0.5 miles SSW of Ilha Gravata.

The islands and islets are steep-to and depths greater than 37m lie between them and in mid-channel between Ilha Gravata and the coast. A shoal patch, with a depth of 17.6m, lies 1 mile NE of Ilha Gravata.

**3.53 Ponta Emerencia** (22°49'S., 41°51'W.), bold and prominent, is located about 5.5 miles SW of Cabo Buzios.

Two islets lie within 0.5 mile ESE of the point, and two above-water rocks lie E of the islets.



A six mile chain of islands and islets lie in a NE to SW direction about 1 to 3 miles off the coast between Ponta Emerencia and Ponta Lajinha.

Commencing at the NE end of the chain, Ilha do Breu lies about 2.5 miles SE of Ponta Emerencia, thence in sequence to the SW they are as follows; Ilha de Pargos, Ilha dos Capoes, Ilha Comprida, which is the largest, Ilha Redonda, Ilha dos Irmaos, and Ilha dos Papagaios.

The larger islands are covered with trees, but are difficult to distinguish as they blend with coastal features which are similar in aspect.

The islands and islets are all steep-to, except for Ilha Comprida, where sunken rocks lie about 0.2 mile E of its NE end. Depths greater than 20m lie to within 0.25 mile of the seaward side of the chain islands.

**Canal de Papagaios** (22°51'S., 41°57'W.), the channel between the above chain of islands and the mainland, is clear of dangers with the exception of Laje do Pero, a rock with a depth of less than 2m, lying close E of Ponta do Pero. There is always smooth water in this channel, even during fresh winds, and there is good anchorage under the lee of the islands.

The coast SW of Ponta do Pero to Ponta Lajinha, on the E side of Barra Nova de Cabo Frio, is high and bold. A light is shown from Ponta Lajinha. An aeronautical radiobeacon transmits from a position near Pedro de Aldeia, 6.75 miles NW of Ponta Lajinha.

**3.54 Barra Nova de Cabo Frios** (22°53'S., 42°00'W.) lies in the mouth of the Rio Itaipuru which drains the large Lagoa de Araruama. The lagoon extends nearly parallel with the coast for 21 miles W of Cabo Frio.

Rio Itajuru is narrow and sinuous. Vessels drawing up to 4m can enter at high water. The bar should only be approached with the service of a pilot.

Anchorage is afforded within the river mouth to small craft, but swinging room is restricted. Anchorage is also afforded close off the bar in depths of 14 to 18m. This anchorage is exposed to winds from SE to SW.

**Cabo Frio** (22°53'S., 42°00'W.) stands on the Rio Itajuru. The port is used mainly for the export of salt and lime. Small craft, with drafts about 1m, can berth at the town pier.

Enseada do Cabo Frio lies between Ilha do Cabo Frio and the mainland coast. An extensive sandbank separates the inlet

into two parts. The N part is the larger of the two and affords good anchorage.

Enseada do Forno and Enseada dos Anjos indent the mainland coast off the W side of the N part of Enseada do Cabo Frio.

The NE entrance to the bay is clear, wide, and deep. Boqueirao, the narrow SW entrance to the bay, lies between the W extremity of Ilha do Cabo Frio and the mainland coast; it is spanned by an overhead cable.

The town of Arraial do Cabo is situated on the W shore of Enseada dos Anjos.

The sandbank which divides the inlet extends ENE from the mainland to about the middle of the NW side of Ilha do Cabo Frio. With NE winds, the sea breaks heavily on the sandbank.

A narrow channel, with a minimum depth of 3.5m, leads over the E end of the sandbank, but local knowledge is essential to its use.

**3.55 Porto do Forno** (22°58'S., 42°01'W.) ([World Port Index No. 12910](#)), lies along the N shore of Enseada dos Anjos and is a shipping point for the areas alkali and salt production.

The port consists of a quay about 200m long with a reported depth alongside of 6m.

To the E of the quay is a pier, with three dolphins off its W side, extending about 0.1 mile S from the shore. A light is shown from the pierhead.

The depth alongside the dolphins was reported to be about 10m.

A conspicuous tank is situated about 0.1 mile NNW of the pier and a conspicuous chimney stands about 1.2 miles NW of the pier.

**Pilotage.**—Pilotage is compulsory. Pilots should be requested through Rio de Janeiro by radio at least 24 hours to arrival.

**Anchorage.**—There is anchorage, in a depth of 16.5m, 0.2 mile ESE of Ponta do Forte.

In the S part of Enseada do Cabo Frio, anchorage is afforded in a cove on the W end of Ilha do Cabo Frio, close within the Boqueirao entrance, in depths of 6 to 9m.

This anchorage is reported to be exposed to winds from the NE and SW. With strong NE winds, it is advisable to moor with an open hawsehole to the E.